

What is claimed is:

1 1. A full-color organic light-emitting diode
2 (OLED) display, comprising:

3 a substrate;

4 a white light-emitting OLED, disposed over the
5 substrate, comprising anodes, cathodes, and at
6 least one white light-emitting organic material
7 layer disposed between the anode and the
8 cathode;

9 a first passivation layer, covering the surface and
10 sidewalls of the white light-emitting OLED;

11 stacked layers of a color-converting layer and a
12 color filter, disposed on the first passivation
13 layer and separated at intervals; and

14 a second passivation layer, covering the surface and
15 sidewalls of the stacked layers.

1 2. The full-color OLED display as claimed in claim
2 1, wherein the material of the substrate comprises glass.

1 3. The full-color OLED display as claimed in claim
2 1, further comprising a reflective layer disposed between
3 the substrate and the white light-emitting OLED.

1 4. The full-color OLED display as claimed in claim
2 3, wherein the material of the reflective layer comprises
3 chromium (Cr) and aluminum (Al).

1 5. The full-color OLED display as claimed in claim
2 1, wherein the display is actively driven.

1 6. The full-color OLED display as claimed in claim
2 5, further comprising a plurality of transistors disposed
3 on the substrate and electrically connecting with the
4 cathodes.

1 7. The full-color OLED display as claimed in claim
2 1, wherein the display is passively driven.

1 8. The full-color OLED display as claimed in claim
2 7, wherein the anodes, parallel with each other and
3 separated at intervals, are perpendicular to the
4 cathodes, also parallel with each other and separated at
5 intervals.

1 9. The full-color OLED display as claimed in claim
2 1, wherein the material of the first passivation layer
3 comprises silicon nitride (Si_3N_4) and silicon oxide
4 (SiO_2).

1 10. The full-color OLED display as claimed in claim
2 1, wherein the stacked layers are separated by a
3 plurality of ribs at intervals.

1 11. The full-color OLED display as claimed in claim
2 1, wherein the material of the ribs comprises a resin.

3 12. The full-color OLED display as claimed in claim
4 1, wherein the second passivation layer comprises silicon
5 nitride (Si_3N_4) and silicon oxide (SiO_2).

1 13. The full-color OLED display as claimed in claim
2 1, further comprising a polarized plate disposed on the
3 second passivation layer.

1 14. The full-color OLED display as claimed in claim
2 1, further comprising a buffer disposed between the white
3 light-emitting OLED and the first passivation layer.

1 15. The full-color OLED display as claimed in claim
2 1, wherein the anodes comprise transparent conductive
3 material.

1 16. The full-color OLED display as claimed in claim
2 1, wherein the cathodes comprise transparent conductive
3 material.

1 17. A method of fabricating a full-color OLED
2 display, comprising:

3 providing a substrate;

4 forming a white light-emitting OLED comprising
5 anodes, cathodes, and at least one white light-
6 emitting organic material layer on the
7 substrate, wherein the white light-emitting
8 organic material layer is disposed between the
9 anodes and the cathodes;

10 forming a first passivation layer to cover the
11 surface and sidewalls of the white light-
12 emitting OLED;

13 forming a plurality of ribs separated at intervals
14 on the first passivation layer;

15 filling stacked layers of a color-converting layer
16 and a color filter in the intervals between the
17 ribs; and

18 forming a second passivation layer to cover the
19 surface and sidewalls of the stacked layers.

1 18. The method as claimed in claim 17, wherein the
2 material of the substrate comprises glass.

1 19. The method as claimed in claim 17, before
2 formation of the white light-emitting OLED, further
3 comprising forming a reflective layer on the substrate.

1 20. The method as claimed in claim 19, wherein the
2 material of the reflective layer comprises chromium (Cr)
3 and aluminum (Al).

1 21. The method as claimed in claim 1, wherein the
2 display is actively driven.

1 22. The method as claimed in claim 5, further
2 comprising forming a plurality of transistors on the
3 substrate to electrically connect with the cathodes.

1 23. The method as claimed in claim 1, wherein the
2 display is passively driven.

1 24. The method as claimed in claim 23, wherein the
2 anodes, parallel with each other and separated at
3 intervals, are perpendicular to the cathodes, also
4 parallel with each other and separated at intervals.

1 25. The method as claimed in claim 17, wherein the
2 material of the first passivation layer comprises silicon
3 nitride (Si_3N_4) and silicon oxide (SiO_2).

1 26. The method as claimed in claim 17, wherein the
2 material of the ribs comprises a resin.

3 27. The method as claimed in claim 17, wherein the
4 second passivation layer comprises silicon nitride (Si_3N_4)
5 and silicon oxide (SiO_2).

1 28. The method as claimed in claim 17, further
2 comprising, after forming the second passivation layer,
3 forming a polarized plate thereon.

1 29. The method as claimed in claim 17, further
2 comprising, before formation of the first passivation
3 layer, forming a buffer on the white light-emitting OLED.

1 30. The method as claimed in claim 17, wherein the
2 anode comprises transparent conductive material.

1 31. The method as claimed in claim 17, wherein the
2 cathode comprises transparent conductive material.

1 32. The method as claimed in claim 17, wherein the
2 color-converting layer is formed by spin-coating.

1 33. The method as claimed in claim 17, wherein the
2 color filter is formed by spin-coating.

1 34. The method as claimed in claim 25, wherein the
2 first passivation layer is formed by sputtering.

1 35. The method as claimed in claim 27, wherein the
2 second passivation layer is formed by sputtering.